ABRITES

Diagnostics for Nissan/ Infiniti

User Manual

List of Revisions			
Date	**Chapter**	**Description**	**Revision**
24.06.2009		Initial version of the document.	2.0
01.06.2013	all	Revised, updated, renewed	4.2
02.03.2014	all	Revised, updated, renewed; design update; structural and content changes	4.3

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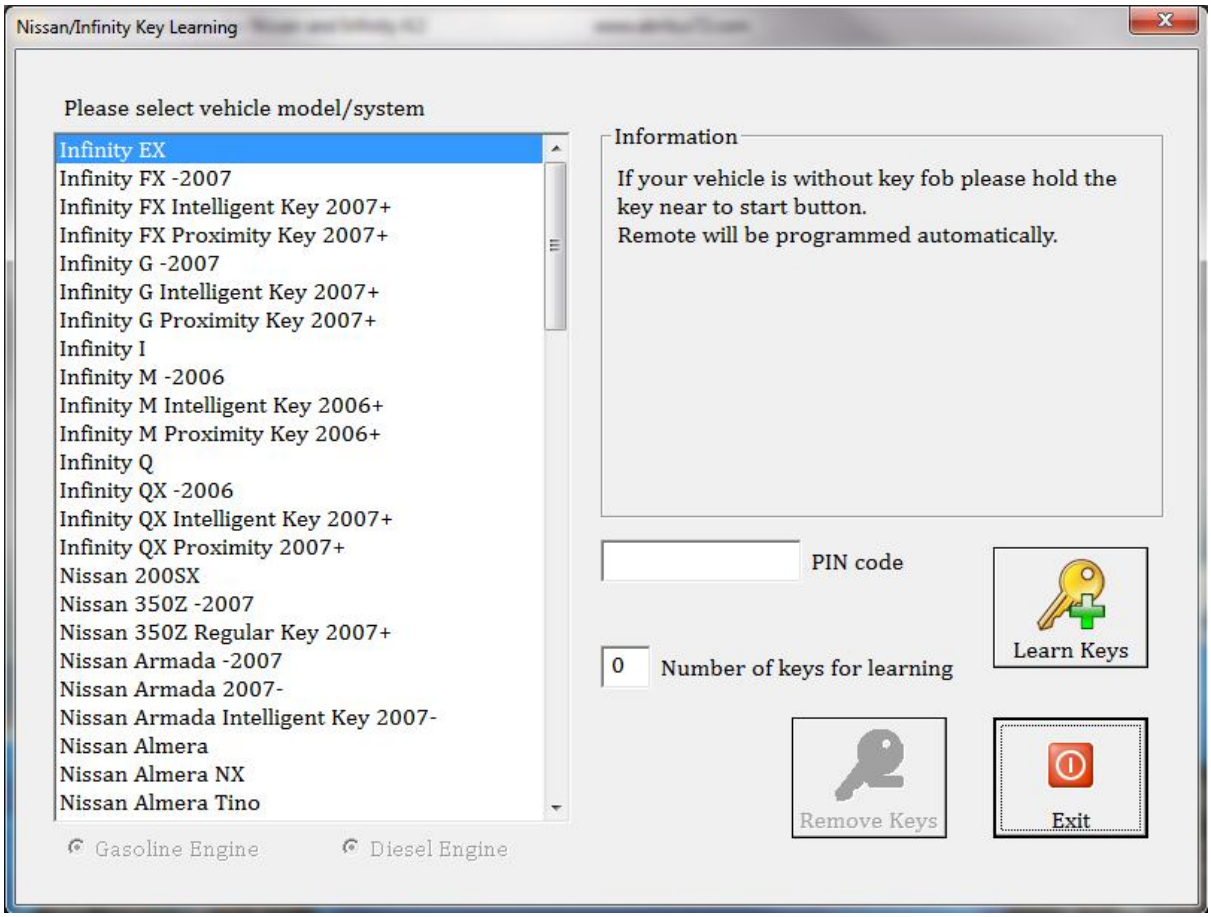
1. INTRODUCTION

"ABRITES diagnostics for NISSAN" is a Windows PC based professional diagnostic software for vehicles from the NISSAN group. With the help of this software you can perform complete diagnostic operations of all 2000-present vehicles from the NISSAN group, which are in most cases unsupported by other diagnostic testers manufacturers. The "ABRITES diagnostics for NISSAN" also provides complete standard diagnostics (read faults, erase faults, current data, actuator tests) for NISSAN vehicles. Our PC USB diagnostic interface supports K-Line and CAN-BUS interface. Diagnostics is performed via the OBD-II connector.

2. Key learning

Nissan diagnostics is intended for key learning of Nissan vehicles with Immobilizer systems – NATS-2, NATS-4, NATS-5, NATS5+. Connection with immobilizer is to be carried out directly to the immobilizer, instead of OBDII. You have to connect the AVDI interface to the immobilizer.



From the main screen you can select the model of the car and the type of engine.

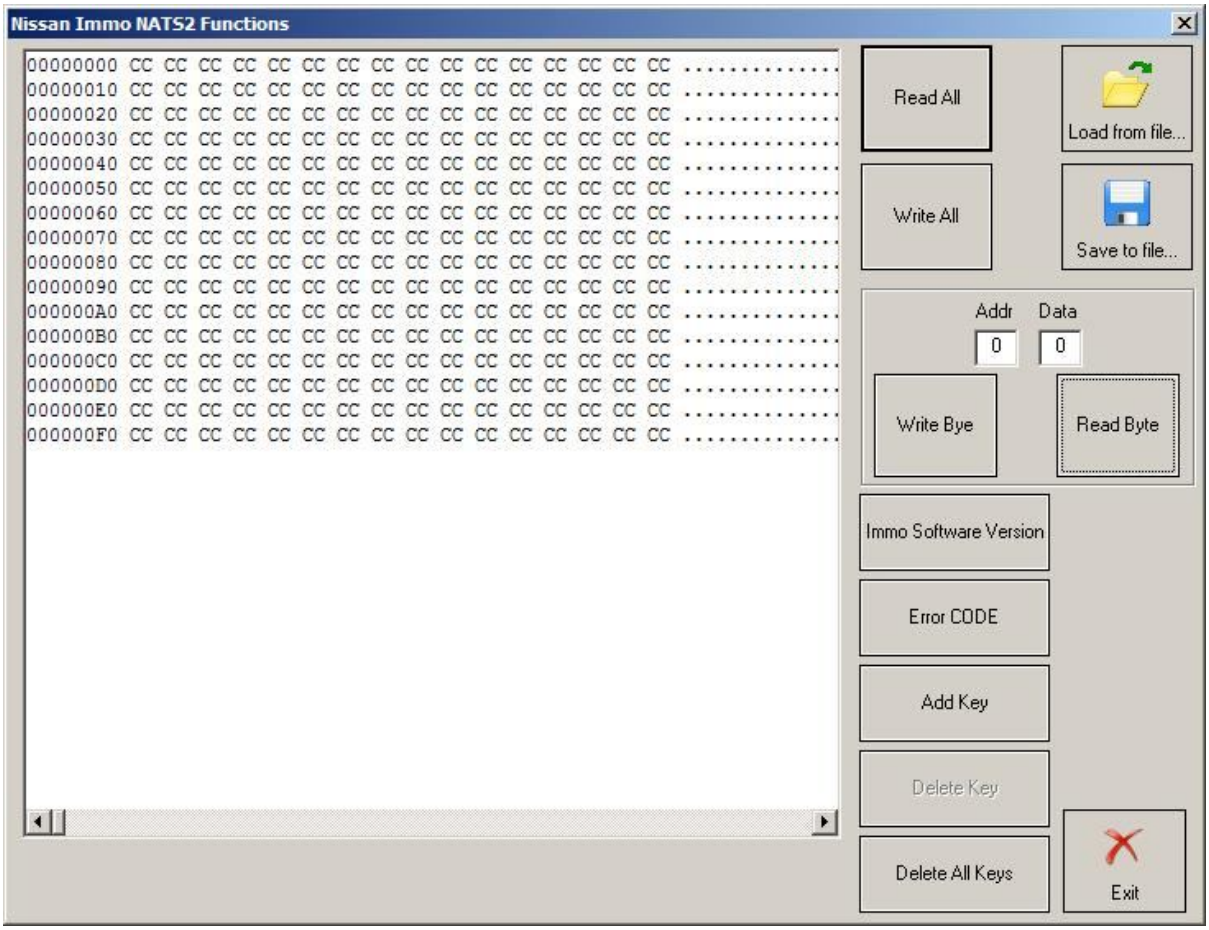
2.1 Immobilizer NATS-2 Siemens :

Immobilizer version:

5WK4593, 5WK4640, 5WK46472, 5WK4825, 5WK48642

Vehicle models:

NISSAN MICRA (K11) 1997
NISSAN Primera W/P10 1991-1996
NISSAN Maxima QX (A32) Schalter V 6 2,0ltr - 1995-2000


Nissan Immo NATS2 Functions
00000000 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000010 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000020 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000030 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
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00000060 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000070 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000080 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000090 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
000000A0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
000000B0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
000000C0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
000000D0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
000000E0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
000000F0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
Read All
Load from file...
Write All
Save to file...
Addr
Data
0
0
Write Bye
Read Byte
Immo Software Version
Error CODE
Add Key
Delete Key
Delete All Keys
Exit

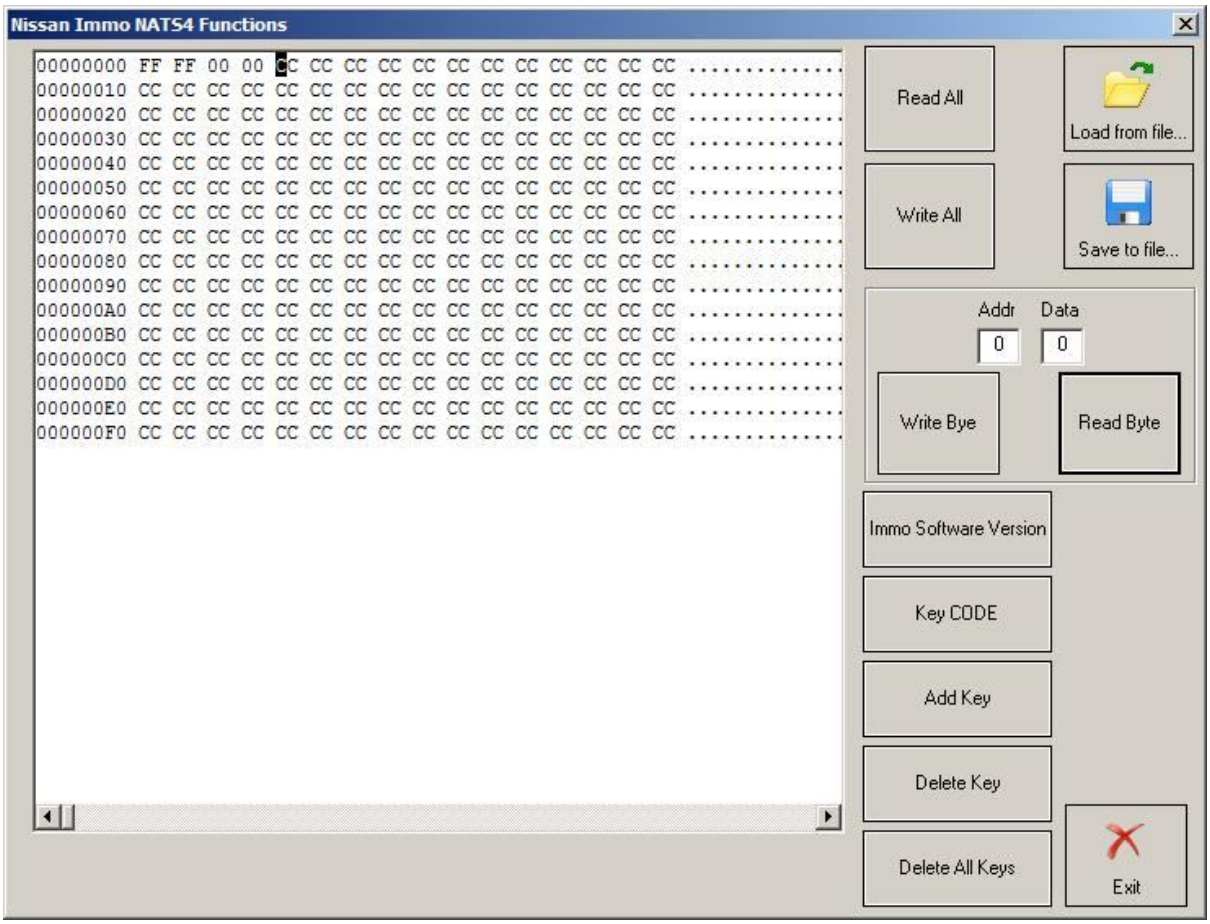
2.2 Immobilizer NATS-4 Siemens:

Immobilizer version:

5WK4738, 5WK4750, 5WK4803, 5WK48543A, 5WK48543B, 5WK48692.

Vehicle models:

NISSAN Micra MY 1998-2000
NISSAN Primera MY 2000-2003
NISSAN Almera MY 1998-2000


Nissan Immo NATS4 Functions
00000000 FF FF 00 00 CC CC CC CC CC CC CC CC CC CC CC CC
00000010 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC
00000020 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC
00000030 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC
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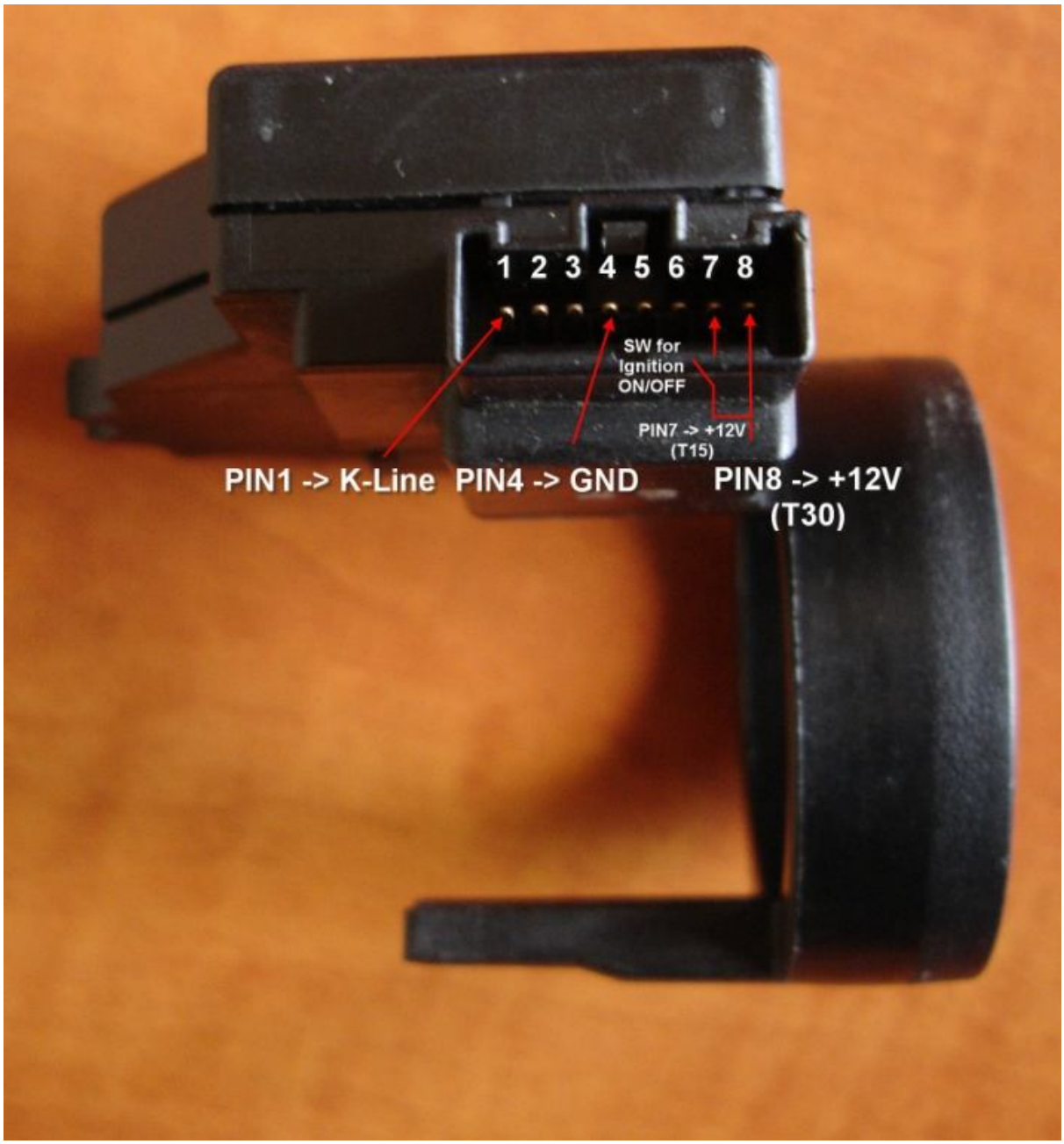
000000D0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC
000000E0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC
000000F0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC
Read All
Load from file...
Write All
Save to file...
Addr
Data
0
0
Write Bye
Read Byte
Immo Software Version
Key CODE
Add Key
Delete Key
Delete All Keys
Exit

The Immobilizer version can be seen on immobilizer label:



AN001 – Base Interface OBDII Male Cable	**NATS – 4**
Pin 7	Pin 1
Pin 4	Pin 4
Pin 16	Pin 8
	Switch between Pin 7 and Pin 8 for Ignition ON/OFF

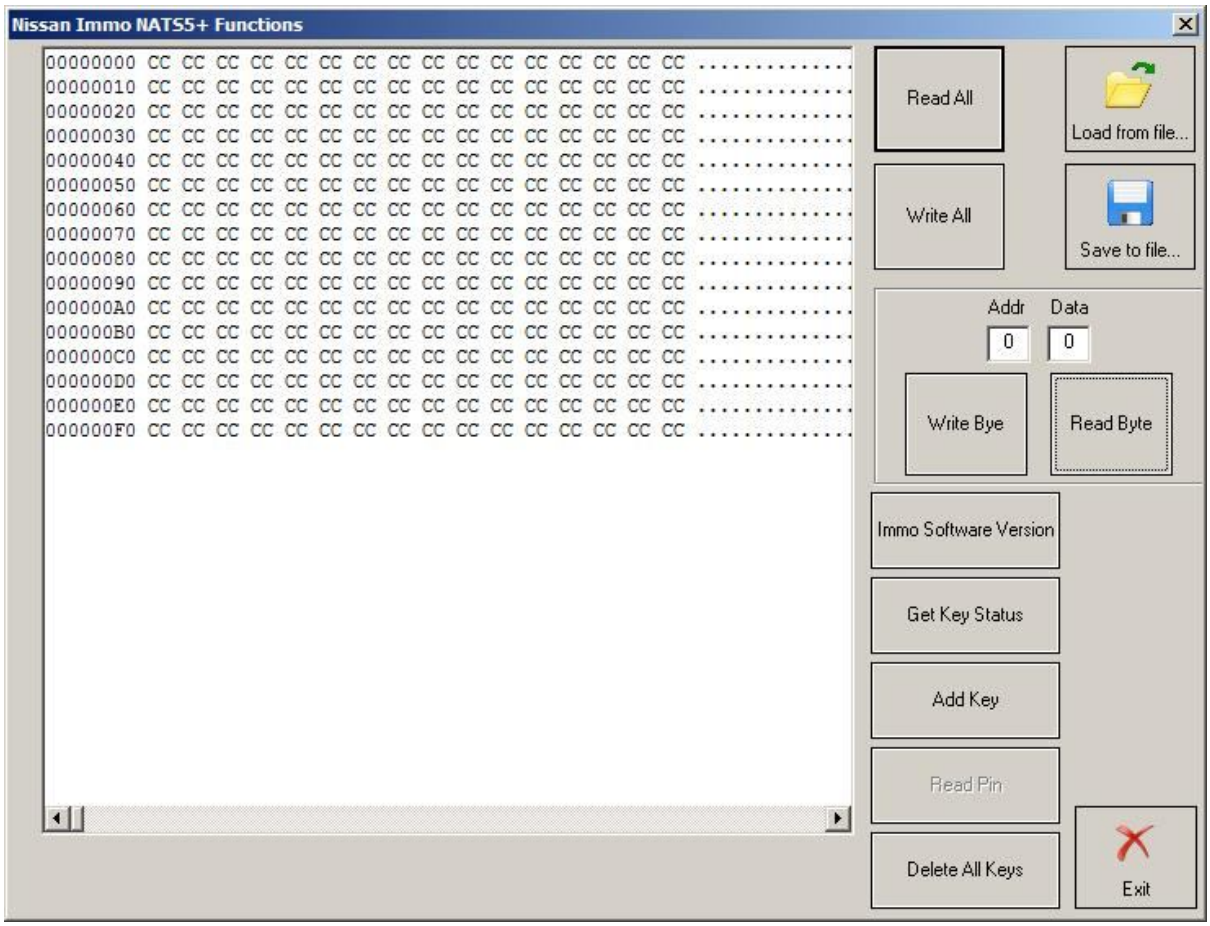
2.3 Immobilizer NATS-5, NATS-5+ Siemens:

Immobilizer version:

5WK48041, 5WK48042, 5WK48042, 5WK48643, 5WK48643, 5WK48644, 5WK48644, 5WK48644.

Vehicle models:

NISSAN Altima MY 2001-2004
NISSAN Altima MY 2005
NISSAN Armada MY 2004-2005
INFINITI FX35/FX45 MY 2004-2005
INFINITI G20 MY 2000-2002
INFINITI G35 MY 2003-2005
INFINITI I30, I35 MY 2000-2004
INFINITI M45 MY 2003-2005
NISSAN Maxima MY 2000-2005
NISSAN Murano MY 2003-2005
NISSAN Pathfinder MY 2001-2005
NISSAN Quest MY 2004-2005
INFINITI QX4 MY 2001-2004
INFINITI Q45 MY 2002-2004
NISSAN Sentra MY 2000-2004
NISSAN Titan MY 2004-2005
NISSAN 350Z MY 2003-2005
NISSAN Primera MY 2003


Nissan Immo NATS5+ Functions
00000000 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000010 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000020 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000030 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000040 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
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00000070 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
00000080 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
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000000A0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
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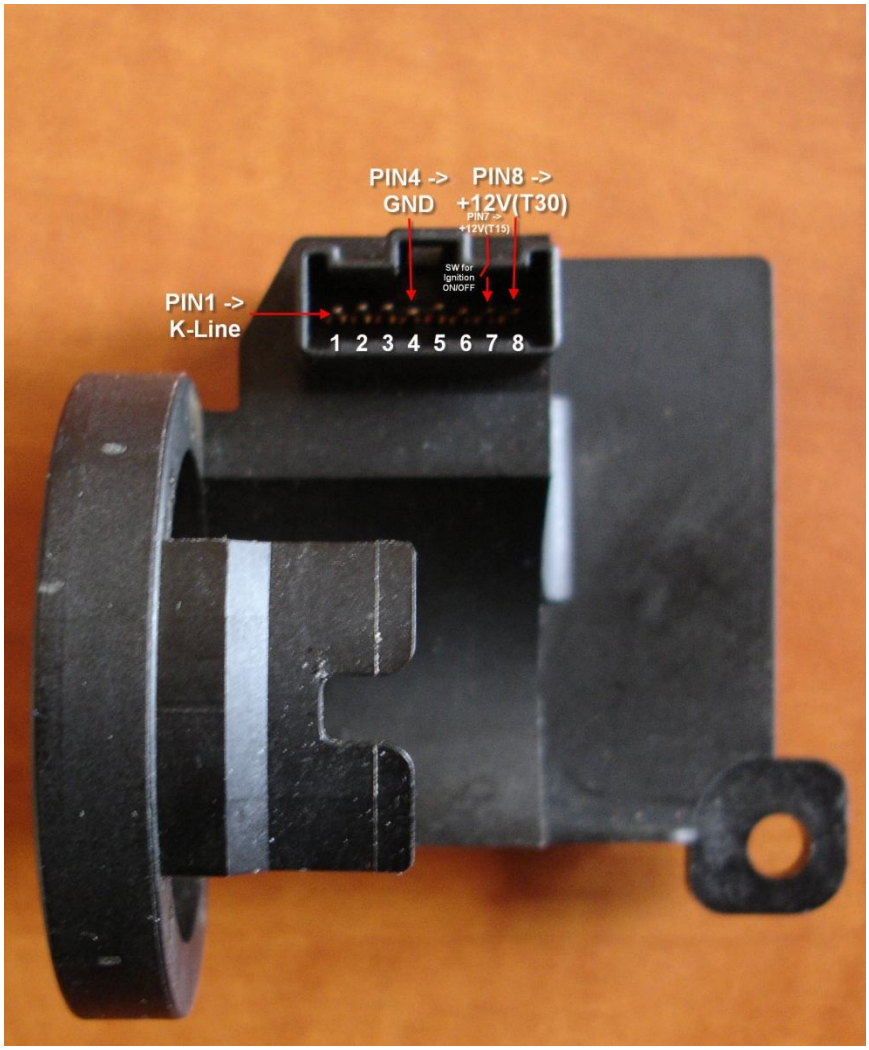
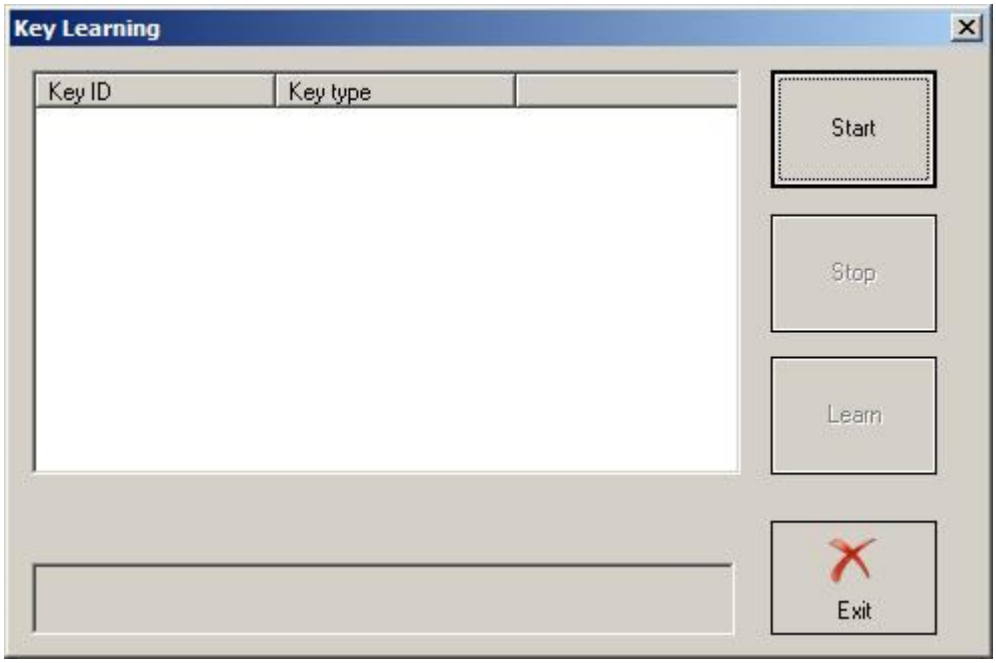
000000C0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
000000D0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
000000E0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
000000F0 CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC CC ....
Read All
Load from file...
Write All
Save to file...
Addr
Data
0
0
Write Bye
Read Byte
Immo Software Version
Get Key Status
Add Key
Read Pin
Delete All Keys
Exit



AN001 – Base Interface OBDII Male Cable	**NATS – 5, 5+**
Pin 7	Pin 1
Pin 4	Pin 4
Pin 16	Pin 8
	Switch between Pin 7 and Pin 8 for Ignition ON/OFF

2.4 CAN Key Learning



3. Software functions

Functions available for Immobilizer manipulations are:

3.1 Read all…

Reading the whole Conf. Data from the immobilizer.

3.2 Write all…

Writhing data from the screen to the immobilizer Conf. Data.

3.3 Load from file…

Load user memory map in order to be programmed into immobilizer Conf. Data.

3.4 Save to file…

Store data from the screen into a file.

3.5 Write Byte

A special function for writing just a single Byte into the immobilizer's Conf. Data.

Pressing the “Write Byte” button will write the data from “Data” field into the immobilizer's Conf. Data on the exact Address pointed by the “Addr” field.

Caution! You have to edit the desired Address into the “Addr” field and Data into the “Data” field before pressing the “Write Byte” button.

3.6 Read Byte

A special function for reading just a single Byte from immobilizer Conf. Data.

Pushing the “Read Byte” button you will read the data from immobilizer Conf. Data from the exact Address pointed by the “Addr” field and data will be displayed into the “Data” field.

Caution! You have to edit desired Address into “Addr” field before pressing “Read Byte” button.

3.7 Immo Software Version

This function will extracting the Immobilizer Software Version and will display it in a pop-up box.

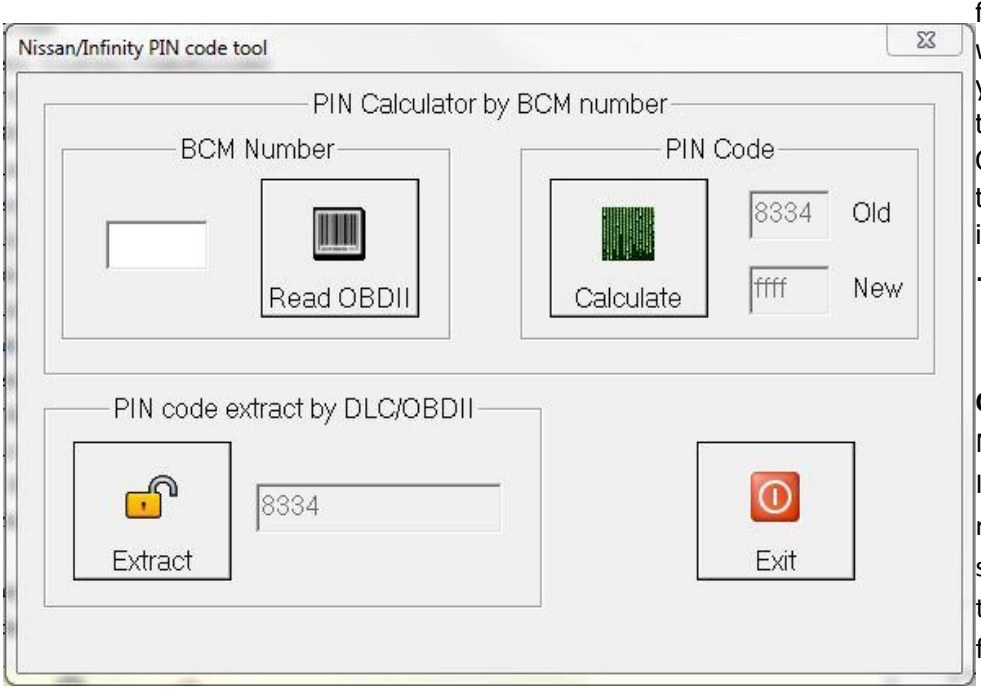
3.8 Get Key Status

You can check if a single key is already learned for this car or not and what the status of it is.

3.9 Add Key

An interactive procedure for adding a new key to the vehicle.

3.10 Pin tool



This function will allow you to read the PIN Code from the immobilizer.

Caution! Not all Immobilizer types support this function!

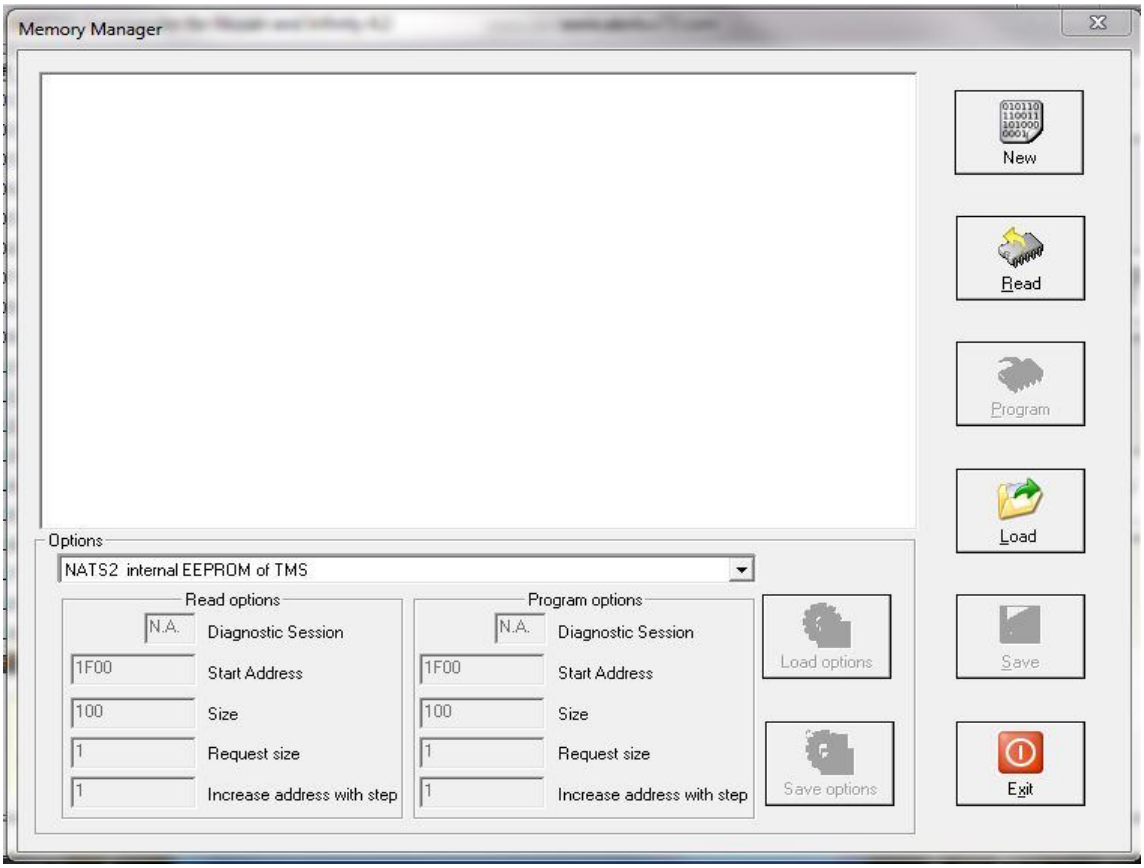
3.11 Delete All Keys

Delete All Keys is a function that should be used with extreme caution. It will erase all registered keys from the immobilizer memory. Be sure that you are prepared to add at least one key after deleting all keys in order to be able to use the vehicle.

WARNING! This is a very dangerous function. Be sure that you learn at least one key before leaving the vehicle.

3.12 Conf. Data NATS 2/5

This function will allow you to modify the NATS Conf. Data version 2 – 5



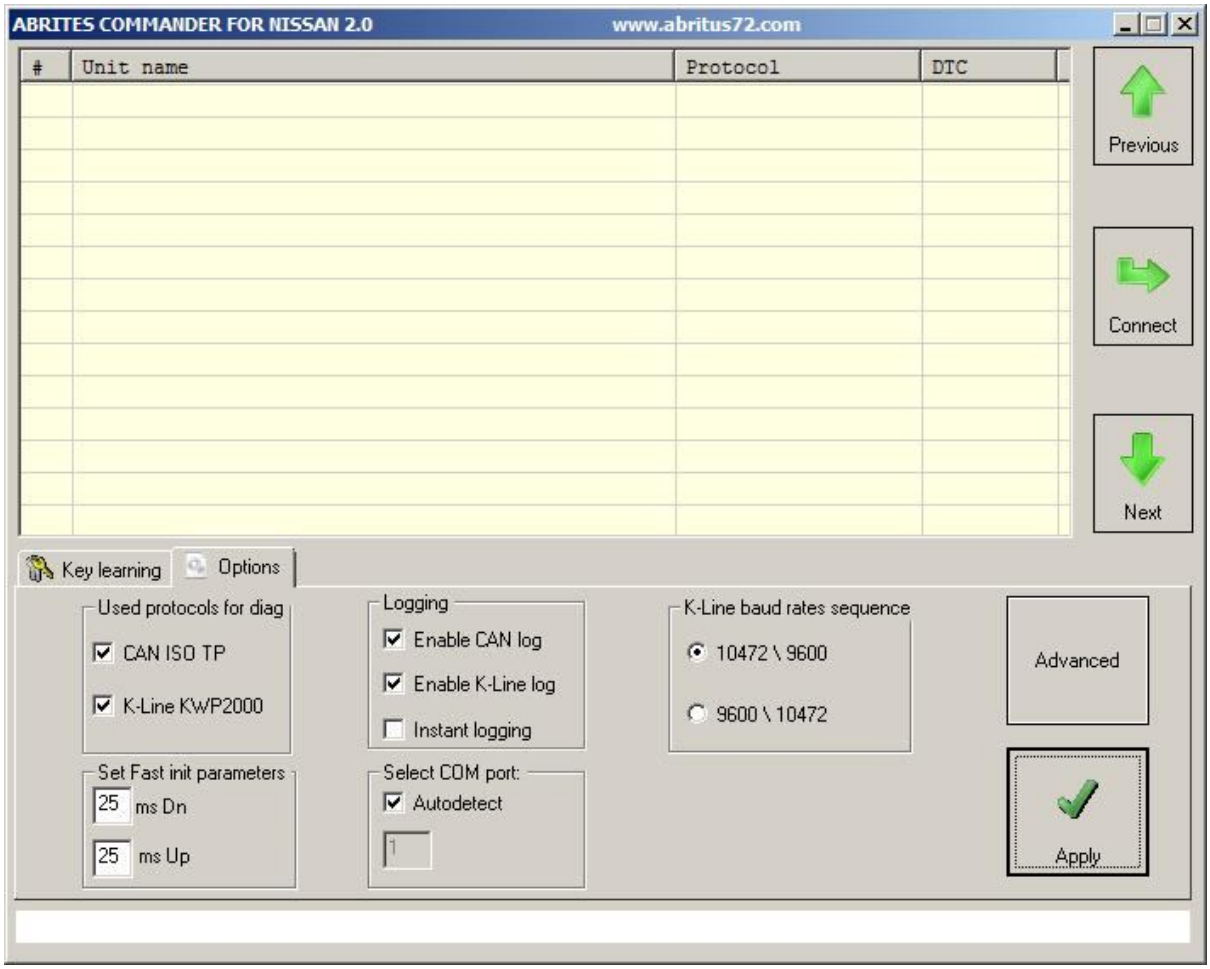
3.13 Exit

Exit from Key functions.

WARNING! Not all functions are available for every Immobilizer type.

4. Options

This set of functions allows you to set up your software.



4.1 Used Protocols

The meaning of the check-boxes is as follows:

- CAN ISO TP - when trying to connect to the device the diagnostics will try to connect to it using “KWP2000 over ISO transport protocol” with baud 500KB/s
- K-Line KWP2000 - when trying to connect to the device the diagnostics will try to connect to it using “KWP2000 over K-Line with fast init” with group speed selected in “K-Line Baud Rate Setting”.

4.2 Set Fast init parameters

You can set-up you own time for fast init procedure. By default it is 25 msec. Use the “Up” and “Dn” boxes to adjust the time.

4.3 Logging

By checking the “Enable CAN Log” and “Enable K-Line Log” check-boxes on the “Logging” group it is possible to log the whole CAN/K-Line communication when a problem with a specific control unit occurs.

Please, note that they are active by default!

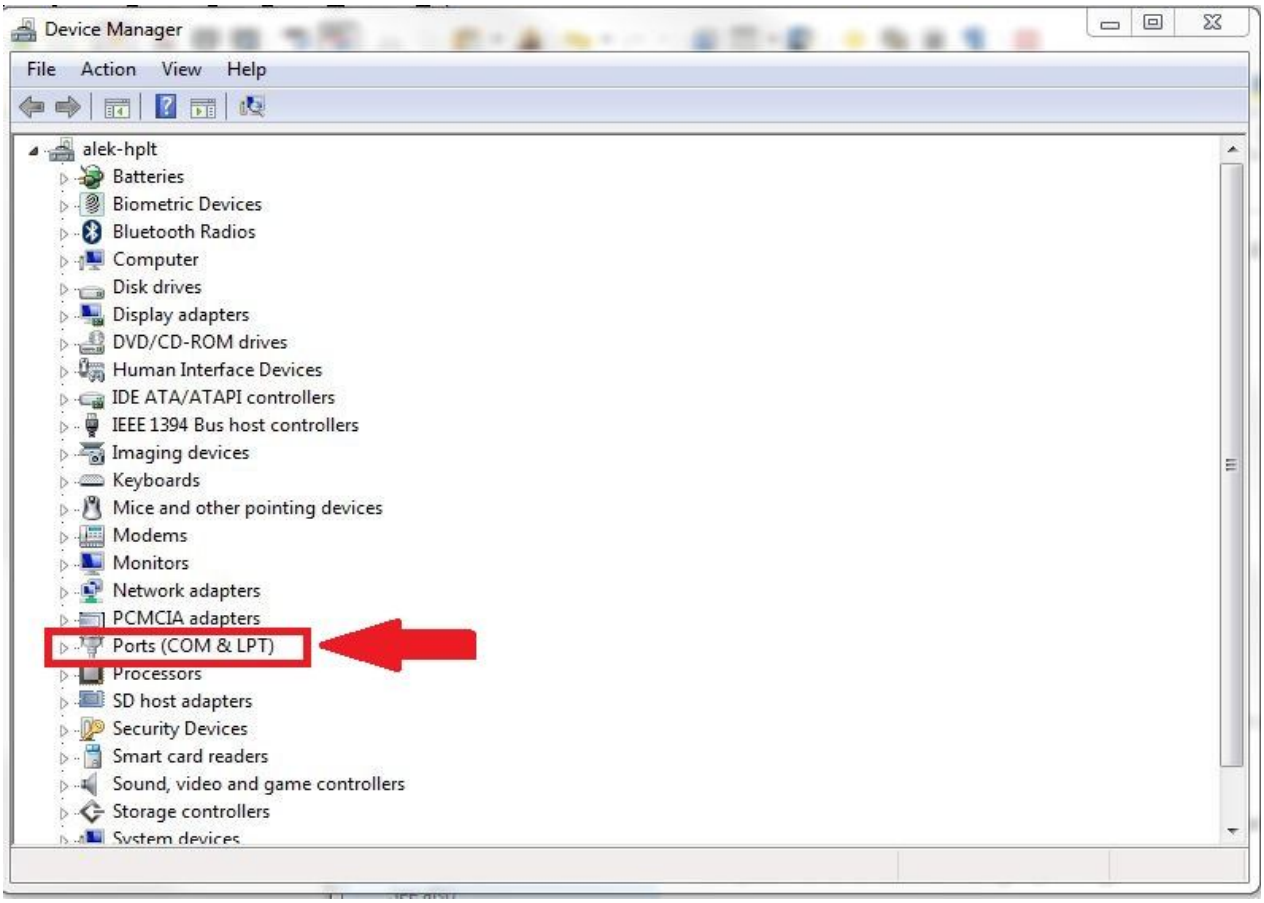
The log-files are binary files which are placed in the “Trace” sub-folder of the ABRITES diagnostics for NISSAN. For each start of the ABRITES diagnostics for NISSAN one file is created, it contains the date/time when it is created in its filename.

NOTE: Please, pay attention that if you enable logging this may significantly decrease the PC performance since writing big data blocks on the hard drive may consume more time on slower machines. So, if your PC is slower, please use the log function only when a problem has to be reported. Also if you have low Hard disk space, you can disable communication logging and/or remove old Log files.

4.4 Set COM port

Normally, the “ABRITES diagnostics for NISSAN” USB Interface is recognized automatically, but there is an option to set it manually. So if you have trouble, as described in the “Troubleshooting” section, you can try to set the port used by the “ABRITES diagnostics for NISSAN” manually. This can be done as follows:

- Open the “Device manager” and check which COM port the USB interface is recognized as.
- Uncheck the “Automatic” check-box and set the port in the respective field.



***Example**: USB interface device recognized as COM11*

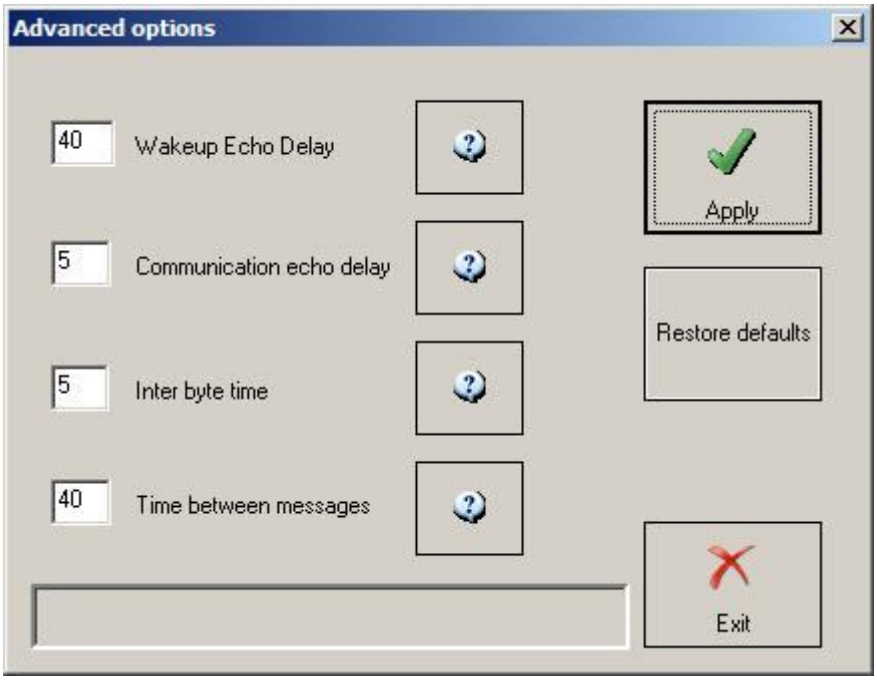
***Hint**: If you are not sure which the port used by the interface is, just unplug and then plug it into the USB slot observing the "Ports" section in "Device Manager". The corresponding port will disappears and appear again.*

4.5 K-Line baud rate sequence

When trying to connect to a device in the vehicle over K-Line, the Abrites diagnostics will try to connect to it using one baud rate, if it does not succeed it will switch to another baud rate and try again. There are two baud rate values currently used – 10427 and 9600. Using the "10472 \ 9600" and "9600 \ 10247" radio-buttons within the options dialog one can set the order in which these two baud rate values will be used.

If "10472 \ 9600" is selected, then the diagnostics will try to connect to the device over K-Line using baud rate 10472 first and if it does not succeed, it will switch to 9600 and try again with it. If "9600 \ 10472" is selected, then the diagnostics will try to connect to the device using baud rate 9600 first and if it does not succeed it will switch to 10472 and try again with it.

4.6 Advanced



The protocols running under K-Line require very precise byte timing. Since Windows is not a real-time operating system, these times are not always respected, so it is possible that the communication with some devices is unstable, or it is not possible to connect. In such cases you can try to change some of the times timing parameters from the “Advanced” button.

The timing parameters have the following meaning:

Wakeup echo delay – time after slow init between receiving “55 xx yy” and sending the inverted value of “yy” (according the K-Line wakeup procedure)

Communication echo delay – time between reception of a byte under KWP1281 and sending it inverted back to the device

Inter byte time – time between sending two bytes under KWP2000

Time between messages – time delay between reception of response from device and sending new request to it.

5. Troubleshooting

Below you can find a list of typical problems and how to solve them:

Problem: When starting the “ABRITES diagnostics for NISSAN” on the splash screen “**Interface NOT found**” is displayed

Solution:

- Please, make sure that the USB interface drivers are installed properly. You can look at the device manager, the USB interface should appear as “USB Serial Port (COMxx)” where “xx” is the number of the port
- If the interface is recognized OK, then please try to unplug and plug it again into the USB slot and restart the “ABRITES diagnostics for NISSAN”.
- If the interface is not recognized (the USB interface appears with a yellow exclamation mark in the device manager), then you can try to solve the problem by uninstalling and reinstalling the USB interface drivers (see sections “Installing USB interface drivers” and “Uninstalling USB interface drivers”).
- If the problem is still present, you can try to set the used port manually as follows:
    - Start the “ABRITES diagnostics for NISSAN”
    - Press the “Options” button
    - Uncheck the “Autodetect” check-box and enter the number of the port from the device manager.
    - The changes will take effect after restart of the “ABRITES diagnostics for NISSAN”

    NOTE: Please, take into account that the used port will change when inserting the USB interface into different USB slots, so the manual setting of the port should be repeated in this case.

Problem: When starting the “ABRITES diagnostics for NISSAN” on the splash screen neither “**Interface found**” nor “**Interface NOT found**” is displayed

Solution:

- Please try to unplug and plug the dongle and the USB interface again into the USB slot and restart the “ABRITES diagnostics for NISSAN”.

Problem: When starting the “ABRITES diagnostics for NISSAN” the splash screen is displayed but the application freeze on this state for about 1-2 minutes. After that “Interface found” is displayed and application functions normally.

Solution: Probably there are some bluetooth devices installed on the PC. Please try to deactivate them temporally.

Problem: When starting the “ABRITES diagnostics for NISSAN” a message “Error code: 0x10001. Please contact ‘support@abritus72.com’ with the Error code in the subject”

Solution:

- Please, contact support@abritus72.com and request and update for your interface.

Problem: When starting the “ABRITES diagnostics for NISSAN” a message “Error code: 0x10002. Please, contact ‘support@abritus72.com’ with the Error code in the subject”

Solution:

- Probably the dongle is not inserted into the USB slot or it is not recognized by the device manager. You can check in the device manager whether it is recognized. It should appear as “HID-compliant device” in the “Human Interface Devices”.

Problem: When starting the “ABRITES diagnostics for NISSAN” a message “Error code: 0x10003. Please contact ‘support@abritus72.com’ with the Error code in the subject”

Solution:

Probably SW dedicated for another interface was run on your interface. Please contact ‘support@abritus72.com’ with the Error code in the subject”

Problem: When starting the “ABRITES diagnostics for NISSAN” a message “Error code: 0x10004. Please contact ‘support@abritus72.com’ with the Error code in the subject”

Solution:

Please contact ‘support@abritus72.com’ with the Error code in the subject”

Problem: When starting the “ABRITES diagnostics for NISSAN” a message “Error code: 0x10005. Please contact ‘support@abritus72.com’ with the Error code in the subject”

Solution:

Please contact ‘support@abritus72.com’ with the Error code in the subject”

Problem: When starting the “ABRITES diagnostics for NISSAN” on the splash screen “**Interface found**” is displayed, but is not possible to connect to devices (especially through K-Line)

Solution:

Make sure that if you run the “ABRITES diagnostics for NISSAN” from a shortcut the “working folder” is set to the folder where the “ABRITES diagnostics for NISSAN” executable is placed.

Problem: The device connects sometimes to the device under K-Line, and sometimes not.

Solution:

Try to increase/decrease the “Wakeup echo delay” timing parameter.

Problem: The connection with the device under K-Line is unstable.

Solution:

Try to increase/decrease the “Inter byte time”, “Time between messages” and “Communication echo delay” parameters.

Problem: It is not possible to connect to a device through the K-Line, since it is possible to connect to it with other diagnostic tools.

Solution: Try to change the baud sequence to 9600/10472 from the options dialog.

Problem: Some device cannot be read or unexpected behavior was found

Solution: Please enable the logging as described in chapter “Logging group” and send the corresponding log-file to support@abritus.com .

6. Appendix

NATS 2 Connection chart.